
Operation

First tone detection

Software requests the QPC422 Tone Detector Card to compare the first signal received on a trunk with one or more specified tones. When the card detects a tone, it compares the tone with the tones requested by software. The tone detector card then sends a message indicating one of the following conditions:

- The detected tone matches one of the tones requested and its level.
- The detected tone is unidentified.

Note: If the detected tone is unidentified, the level of the unidentified tone is included in the message.

When the detected tone changes from a cadenced tone to a continuous tone and the tone detector card has not yet identified the cadenced tone, the continuous tone is considered to be the first tone received. However, if the detected tone changes from continuous to cadenced, the cadenced tone is *not* considered to be the first tone received.

The tone detector card identifies the detected tone as one listed below. The order of the list reflects the sequence in which the tone detector card compares detected tones with requested tones.

- 1 precise dial tone
- 2 precise busy/overflow tone
- 3 SCC dial tone
- 4 busy tone
- 5 overflow tone
- 6 ringback tone
- 7 tone with a duration of 100 ms or more
- 8 tone with a duration of greater than 300 ms
- 9 tone with a duration of less than 300 ms
- 10 unidentified tone
- 11 silence (reported while the unit is active and a specific tone is not yet detected)

The decision-making sequence of the tone detector card allows software to eliminate certain tones from the list of tones requested. For example, when accessing an SCC, the tone detector card is instructed to look for one of the following tones:

- busy or overflow tone
- precise or SCC dial tone
- ringback tone

A timer is started simultaneously. This timer has a value that approximately equals the period in which ringback tone is normally received. If the timer expires before the tone detector card responds, the software sends the card a status request message. The response from the tone detector card indicates that a tone has been detected but is not yet identified. Based on the sequence in which tones are checked, the software assumes that the tone under investigation is ringback tone and that it can continue the SCC call processing.

Specified tone detection

Software can instruct the tone detector card to compare a received tone with one or more specified tones. The software can specify any of the tones listed on [page 8](#) (except unidentified tones) for comparison with received tones. When one of the specified tones is detected, the tone detector card sends a message to the software.

Special common carrier tone detection

When a Meridian 1 connects to an SCC, it requires a start-dial indication from the SCC. The tone detector card detects the start-dial indication (SCC dial tone) and indicates that the SCC is ready to accept digits or that a network busy or SCC busy tone has been encountered, allowing the Meridian 1 to select an alternate route.

Tandem tie trunk network dialing

When a call is switched through a tandem tie trunk network (TTTN), pauses are required to wait for dial tone from each trunk in the chain. Once dial tone is given, further digits can be accepted.

Since the digits are dialed automatically in the TTTN application of the tone detector card, asterisks are inserted in the digit stream to allow for the pauses required. Using the tone detector card to detect tones in the call sequence improves call setup reliability and prevents unnecessary delays. When the tone detector card detects trunk blocking at tandem switches, calls can receive alternate routing.

Interactions

Call setup time increases when a tone detector card is specified for a tie trunk that is not engineered to return dial tone. When a dial tone is not detected within a specified delay interval, the automatic routing features select an alternate route. A tone detector card should not be designated when dial tone is not provided.

The tone detector card cannot be used for manually dialing 500/2500 or SL-1 Telephones because it does not provide audio cut-through to tones.

When a route list entry specifies that a tone detector card is required, and none is available, that entry is not eligible for network queuing.

Meridian 1
QPC422 Tone Detector Card
Description

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